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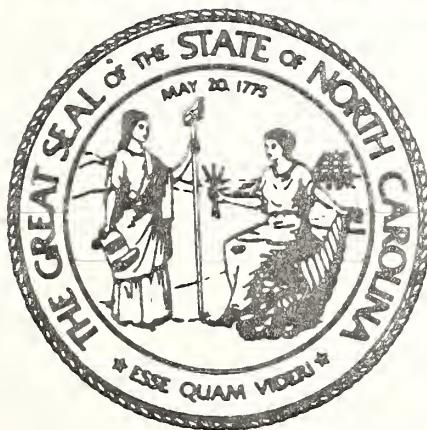
LEGISLATIVE RESEARCH COMMISSION

REPORT

TO THE

1979

GENERAL ASSEMBLY OF NORTH CAROLINA



HOUSING AND BUILDING CODES

RALEIGH, NORTH CAROLINA

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STATE OF NORTH CAROLINA
LEGISLATIVE RESEARCH COMMISSION
STATE LEGISLATIVE BUILDING
RALEIGH 27611



January 10, 1979

TO THE MEMBERS OF THE 1979 GENERAL ASSEMBLY:

The Legislative Research Commission herewith reports to the 1979 General Assembly of North Carolina on the matter of the effect of housing and building codes on the cost of housing. The report is made pursuant to House Joint Resolution 1360 of the 1977 General Assembly.

This report was prepared by the Legislative Research Commission's Housing and Building Codes Study Committee and it is transmitted by the Legislative Research Commission to the members of the 1979 General Assembly for their consideration.

Respectfully submitted,

Carl J. Stewart, Jr.

John T. Henley

Cochairmen
Legislative Research Commission



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INTRODUCTION

The Legislative Research Commission, created by Article 6B of Chapter 120 of the General Statutes, is authorized pursuant to the direction of the General Assembly "to make or cause to be made such studies of and investigations into governmental agencies and institutions and matters of public policy as will aid the General Assembly in performing its duties in the most efficient and effective manner" and "to report to the General Assembly the results of the studies made," which reports "may be accompanied by the recommendations of the Commission and bills suggested to effectuate the recommendations." G.S. 120-30.17. The Commission is co-chaired by the Speaker of the House and the President Pro Tempore of the Senate and consists of five Representatives and five Senators, who are appointed respectively by the Co-Chairman. G.S. 120-30.10(a).

At the direction of the 1977 General Assembly, the Legislative Research Commission has undertaken studies of twenty-seven matters, which were arranged into ten groups according to related subject matter. See Appendix A for a list of the Commission members. Pursuant to G.S. 120-30.10(b) and (c), the Commission Co-Chairmen appointed committees consisting of legislators and public members to conduct the studies. Each member of the Legislative Research Commission was delegated the responsibility of overseeing one group of studies and causing the findings and recommendations of the various committees to be reported to the Commission. In addition, one Senator and one Representative from each committee were designated Co-Chairmen. See Appendix B for a list of the committee members.

House Joint Resolution 1360 (see Appendix C) directed the Legislative Research Commission to study housing and building codes in North Carolina, including consideration of (1) the requirements that are necessary and proper to safe and adequate housing, (2) ways in which present housing and building codes are insufficient or go beyond the standards necessary and proper for safe and decent housing, and (3) ways in which the housing and building codes can be made consistent with the need of North Carolina citizens for safe and low cost housing. The preamble to HJR 1360 cites the propositions that housing and building codes "often require the addition of substantial costs to construction of new homes; these additional costs may place home ownership beyond the reach of many individuals who might otherwise be able to afford to own their own homes; and a thorough examination of these codes to determine which of the requirements are necessary to safety and which are not, might allow for the elimination of unnecessary requirements and therefore lower the cost of home ownership."

What prompted the introduction and passage of HJR 1360 were concerns expressed by some home builders that provisions in the housing and building codes might unnecessarily be raising the cost of home ownership with the consequence of forcing middle and lower income groups out of the housing market; and that whether or not this was the case was a matter that should be examined by a legislative study group, which could report its findings and any recommendations to the General Assembly.

COMMITTEE PROCEEDINGS AND FINDINGS

The Housing and Building Codes Study Committee held its first meeting on December 2, 1977, at the State Legislative Building. After the organizational preliminaries, the Committee heard from Mr. Kern E. Church, Chief Engineer of the Department of Insurance's Engineering Division, which administers the State Building Code and serves as the staff for the State Building Code Council. Mr. Church explained to the Committee the history of the Building Code Council, and how the Council prepares, holds hearings on, and adopts the provisions of the State Building Code under the authority granted to it in Article 9 of General Statutes Chapter 143. He also explained how the Council and his division work with local government officials in implementing and enforcing housing and building code provisions. Mr. Church further cited some recent code requirements that do raise the cost of homes, such as smoke detectors, ground-fault circuit interrupters (which interrupt electrical current whenever electrical appliances or equipment come into contact with water), back flow preventers for outdoor faucets (which prevent insecticides and other toxins sprayed through a hose adapter from being drawn back into the house water supply due to negative pressure), and additional insulation. He explained that the Council decided that the safety aspects of the first three items far outweighed their costs, and that the energy savings realized from additional insulation would inure to the benefit of the homeowner and the general public as well.

Mr. Church then mentioned a couple of items that were proposed to the Council as cost-saving measures but were rejected. The first was a reduced diameter for plumbing system vents, which

allow for the emission of sewer gases into the air above the roofs of homes. The Council was of the opinion that although a vent of 3/4" to 1" diameter (as proposed) would function hydraulically, such a vent would be more likely to become clogged than the 3" to 4" vent required by the codes. The other proposal was to allow the use of treated wood instead of concrete foundations for residential dwellings, which arguably would reduce construction costs (at that time about \$200 per dwelling). The Council has repeatedly rejected that proposal because no guarantees could be given as to the life span of a wood foundation or to any cost reduction if the wood foundation was not properly installed.

Mr. Church concluded his remarks by stating that these decisions were in effect judgment calls, that the Council had been delegated the authority by the General Assembly to promulgate housing and building code provisions "as may be found reasonably necessary for the protection of the occupants of the building or structure, its neighbors, and members of the public at large" (as G.S. 143-138(b) states), and that the Council felt that its decisions were in the best interests of the public.

Mr. Steven Thomson, Staff Director for the Land Policy Council, briefly addressed the Committee. He stated that although the Land Policy Council has not become involved in state and local building codes, the Council has a strong interest in trying to simplify regulatory programs at the state and local level. Mr. Thomson mentioned that there might be some other agencies within the Department of Natural Resources and Community Development that may have some interest in the study.

Senator Whichard suggested that the next meeting should be in the form of a public hearing, where knowledgeable and interested persons and organizations could address the Committee about problems in the area of housing and building codes, to the effect that the Committee would be better able to identify what is involved in its undertaking. Discussion followed and suggestions were put forth as to what groups might be invited. The names of the organizations invited to appear and participate can be found in Appendix D.

Senator Whichard said that he thought the Committee could provide a forum for the airing of whatever grievances exist in the area of housing and building code provisions, but the Committee should not limit the scope of the study in that regard. He further stated that the fundamental issue faced by the Committee is one of the legislative delegation of authority to the State Building Code Council and whether that authority should be modified in any manner; if, however, the nature of the situation consists of grievances that can be resolved by communication between home builders and the Council, then the Committee could serve as a forum to that end.

On December 14, 1977, the organizations listed in Appendix D were notified of the public hearing scheduled for January 26, 1978, and were invited to participate in the hearing by addressing the issues delineated in HJR 1360. The response to this invitation was extremely limited, and only a few organizations sent representatives to the hearing.

On January 26, 1978, the Committee assembled in the Legislative Auditorium to receive information relevant to the subject matter

of the Committee. At the hearing the representatives from the North Carolina Home Builders Association told the Committee that it is difficult to find any specific provisions in the housing and building codes that, if changed, would reduce the cost of housing. The statement of Mr. William A. Taylor, Chairman of that association's Building Codes Committee, appears in Appendix E. The representatives from the North Carolina Chapter of the American Institute of Architects stated that of the many costs to be considered in housing construction (land, zoning, and use of land, site development, material, labor, financing, profit, and real estate fees) compliance to the codes is not an appreciable cost item. The statements of the Government Affairs and Energy Committees of the NCAIA appear in Appendix F.

It should be noted that some of the presentations made at the public hearing dealt with the issue of wood versus cement foundations for residential dwellings. The Committee was of the opinion that the final determination of this materials debate properly resided with the State Building Code Council, although the proponents and opponents were given the opportunity to be heard and to discuss the merits of their respective positions.

There was also discussion of code enforcement throughout the State. Mr. Ray DeBruhl, who is a professor of civil engineering at North Carolina State University and conducts the local building inspectors' program established by the 1977 General Assembly, stated that the 1977 legislation (Chapter 531 of the 1977 Session Laws) should address some of the concerns about uneven code enforcement but should not have any adverse effect on home construction costs.

After the adjournment of the hearing the Committee met for further discussion. The Committee decided to attempt to locate home builders who were not members of the statewide Home Builders Association (and were therefore not represented at the public hearing) in order to determine whether or not they were experiencing any problems with the codes. Letters were subsequently mailed to all of the members of the General Assembly to find out if anyone involved in home construction had contacted them about housing and building code provisions that were unnecessarily raising the cost of home ownership. Because there was no directory of non-member home builders, the Committee figured that if there were any significant problems with the codes, they would surface in complaints voiced by the constituents of legislators. After allowing a significant amount of time for responses to this inquiry, the Committee, with the consent of the sponsor of HJR 1360, decided to terminate its study effort.

CONCLUSION

After evaluation of the information and testimony concerning the impact of housing and building codes on the cost of construction of residential dwellings, the Housing and Building Codes Study Committee concludes that there are no code provisions that are both (1) unnecessary or insufficient and (2) causing substantial increases in construction costs. The rising costs of land development, financing, labor, and materials (and the availability of the last three items) have been more substantially connected with the increasing price of home ownership. During the last eleven years the price of new homes has virtually doubled, yet during the

same time virtually the same housing and building codes have been in existence. Even after the addition of the safety and insulation requirements to the codes, in early 1978 the cost of new house construction was rising at the rate of approximately one percent (1%) per month.

During the public hearing held by the Committee, it was suggested that the General Assembly conduct impact studies prior to enactment of legislation pertaining to residential construction, specifically noting the effect of the proposed legislation on construction costs. While the Committee recognizes that there is considerable merit to this suggestion, it realizes that the General Assembly does not at this time have the staff or resources that would be necessary to accomplish such an assignment.

Appendix A

STATE OF NORTH CAROLINA
LEGISLATIVE RESEARCH COMMISSION
STATE LEGISLATIVE BUILDING
RALEIGH 27611



MEMBERSHIP

1977-1979

Cochairmen:

House Speaker Carl J. Stewart, Jr.
Gastonia

Senate President Pro Tempore John T. Henley
Hope Mills

Members:

Representative Chris S. Barker, Jr.
New Bern

Senator Dallas L. Alford, Jr.
Rocky Mount

*Representative A. Hartwell Campbell
Wilson

**Senator Russell G. Walker
Asheboro

Representative John R. Gamble, Jr.
Lincolnton

Senator Cecil J. Hill
Brevard

Representative H. Parks Helms
Charlotte

Senator Robert Byrd Jordan, III
Mt. Gilead

Representative Lura S. Tally
Fayetteville

Senator Vernon E. White
Winterville

*Replaced Representative Thomas O. Gilmore in 1978.

**Replaced Senator Luther J. Britt, Jr., in 1978

Appendix B

STATE OF NORTH CAROLINA
LEGISLATIVE RESEARCH COMMISSION
STATE LEGISLATIVE BUILDING
RALEIGH 27611



HOUSING AND BUILDING CODES STUDY COMMITTEE
1977-79

Legislative Research Commission Member Responsible for Study:

Representative Chris S. Barker, Jr.
New Bern

Committee Cochairmen:

Representative Judson D. DeRamus
Winston-Salem

Senator Willis P. Whichard
Durham

Committee Members:

Representative E. Graham Bell
Gastonia

Senator Joseph J. Harrington
Lewiston

Representative George P. Cullipher
Williamston

Senator W. Craig Lawing
Charlotte

Representative Glenn A. Morris
Marion

Mr. Emory C. Albritton
Fayetteville

Representative J. Reid Poovey
Hickory

Miss Virginia Beacham
Raleigh

Representative Thomas B. Sawyer
Greensboro

Mr. C. W. Dawson
Kinston

H. R. 1360 RESOLUTION 92

**A JOINT RESOLUTION DIRECTING THE LEGISLATIVE RESEARCH
COMMISSION TO STUDY HOUSING AND BUILDING CODES IN
NORTH CAROLINA TO DETERMINE WHETHER THESE CODES
HAVE THE EFFECT OF RESTRICTING HOME OWNERSHIP.**

Whereas, housing and building codes in North Carolina often require the addition of substantial costs to construction of new homes; and

Whereas, these additional costs may place home ownership beyond the reach of many individuals who might otherwise be able to afford to own their own homes; and

Whereas, a thorough examination of these codes to determine which of the requirements are necessary to safety and which are not, might allow for the elimination of unnecessary requirements and therefore lower the cost of home ownership;

Now, therefore, be it resolved by the House of Representatives, the Senate concurring:

Section 1. The Legislative Research Commission, as structured by G.S. 120-30.10 et seq., shall study Housing and Building Codes in North Carolina including, but not limited to, consideration of the following:

(1) the ways in which building codes have presently been formulated;

(2) the substance of building codes in North Carolina;

(3) the requirements that are necessary and proper to adequate and safe housing;

(4) a determination of the various ways in which present building and housing codes are insufficient, or go beyond the standards necessary and proper to safe and decent housing; and

(5) ways in which the building codes can be made consistent with the need of North Carolina citizens for safe housing and low cost housing.

The Commission shall report to the 1979 General Assembly.

Sec. 2. This resolution shall become effective upon ratification.

In the General Assembly read three times and ratified, this the 1st day of July, 1977.

Appendix D

ORGANIZATIONS INVITED TO APPEAR BEFORE THE LEGISLATIVE RESEARCH COMMISSION HOUSING AND BUILDING CODES STUDY COMMITTEE

N. C. Home Builders Assn.
N. C. Assn. of Plumbing-Heating-
Cooling Contractors
N. C. Assn. of Electrical Contractors
N. C. Manufactured Housing Institute
Professional Engineers of N. C.
N. C. Society of Engineers
Associated General Contractors
of America, Inc.
American Institute of Architects
N. C. Chapter
Carolina Roofing & Sheet Metal
Contractors Assn.
Home Builders Assn. of Raleigh and
Wake County
N. C. Consumer Finance Assn.
N. C. Concrete Masonry Assn.
N. C. Forestry Assn.
National Electrical Contractors
Assn. - Carolina Chapter
Carolinas Council of Painting and
Decorating Contractors of America
Portland Cement Association
N. C. Bankers Assn.
N. C. Consumer Council
N. C. Landscape Contractors
Raleigh Board of Realtors
Consumer Protection Division
N. C. Savings & Loan League
Assn. of Mortgage Bankers of N. C.
Mr. Claude Pope, President
N. C. Credit Union League
Mortgage Bankers Assn. of the
Carolinas
American Sub-Contractors Assn. of
the Carolinas, Inc.
Carolina Labor and Building Material
Dealers Assn.
Brick Assn. of North Carolina
N. C. Assn. of Realtors, Inc.

Appendix E

COMMENTS

BY WILLIAM A. TAYLOR

CHAIRMAN, BUILDING CODES COMMITTEE

NORTH CAROLINA HOME BUILDERS ASSOCIATION

The North Carolina Home Builders Association has always supported the North Carolina Uniform Residential Building Code. Our concern has been with the uneven enforcement of these codes at local levels. Others of us here today will want to speak on this matter of uneven enforcement. However, the North Carolina Home Builders Association holds the highest respect for our Building Code Council and we in the Association are proud to have participated in the passing of legislative House Bill 399: "An Act to Establish the N. C. Code Official Qualification Board and To Provide For More Even Enforcement of the State Building Code Throughout the State."

In preparing the research for the Commission's study on Housing and Building Codes, the NCHBA invited builder and associate members to review the residential building code and to recommend ways in which we may reduce the cost of housing without reducing the quality of housing; find alternatives to our methods of building; and comment on any items included in 1 thru 5 of the House Joint Resolution 1360.

The following are items that were brought to the attention of the N. C. Home Builders Association Building Code Committee. Some of the opinions relate directly to the Building Code, while other comments or recommendations may be given consideration on local levels.

1. Residential building with solite block, using the surface bonding method.

Appendix E

2. Establishment of uniform fees for plumbing, heating and electrical throughout the State.
3. Strengthening of the General Contractors' Law.
4. Possible elimination of floor insulation.
5. Changing the work "adapted" to "adaptable", as it relates to building for the handicapped.

It is the opinion of the NCHBA Building Code Committee that the N. C. Uniform Residential Building Code works and it is difficult to find specifics in the Building Code, that if changed, would reduce the cost of housing. We feel the interpretations of the Code are handled well by the Building Code Council.

However, other speakers may want to address alternative methods of building here today.

In closing, the North Carolina Home Builders Association would like to suggest possible areas of studies:

1. Time consuming process of land planning and sub-division approval. Few realize the dramatic effect that a \$1,000 front-end charge has on the cost of a new house.

Adding \$1,000 in cost during the construction process adds about \$4,535 to the cost of the dwelling. You may wish to refer to Appendix 1 of my comments.

Reference Study: "The Inseparable Twins - High Government Standards and High Housing Costs" published by the Oregon State Home Builders Association, 565 Union Street, N.E., Salem, Oregon 97301

Appendix E

2. Concerning bills pending, we would request that the Legislature do an impact study on bills pertaining to residential construction prior to passage of the bill, specifically noting the bill's effect on building costs.
3. Escalating costs of building materials: For example, a 2 x 4 stud which was \$1.21 only six months ago, is now costing contractors \$1.52.

THE EFFECT OF \$1,000 ADDED TO THE COST OF A HOME DURING THE LAND DEVELOPMENT, PERMIT ACQUISITION OR CONSTRUCTION PHASE

Discount points (4-1/4)	Sales Commission (6%)	\$ 60.00
Varies, based on 100% loan	Escrow	2.00
Building permit fee	3.03 Profit (5%)	50.00
HOW Warranty	2.00 Interim Loan Fee	15.00
Title Fee	3.00 Interim interest	
Overhead (8%)	80.00 (6 months @ 9-1/2%)	<u>46.25</u>
	Total Mark Up	\$306.28

If the simple "add-on" system is used, this will increase the monthly payment for principal and interest (on a 25-year 9% mortgage) by \$10.91, or \$130.92 a year. Insurance will cost about \$2 per year more, and property taxes would increase by \$39 per year (because of increased assessment).

This results in an increase of \$14.33 per month, or \$171.92 per year, or \$4,298 per life of mortgage.

While these figures are substantial and few realize the impact of a "few dollars on the front end", the calculations above are deceptive because they understate the amount which may be "added on" if the builder is to make sufficient money to operate his business.

The above example indicates \$306.28 added to the initial \$1,000 charge for the "extra's" that are based on price. The point is, those "extra's" would be based not on \$1,000 as the example indicates, but on \$1,306.28, the new total. The sales commission, for example, is calculated on the total selling price, not on a given price and then "added on". This oversight by many unsophisticated builders results in diminished profit margins or losses in some cases.

To correct calculation, (and we undertake this process to try to clarify a complicated issue), calls for recognizing these "mark-up extra's" must--in effect--be paid on themselves.

Appendix E

This requires they be converted to a percent (in our example, 30.6%), that percent subtracted from 100% and the resulting figure divided into our base "hard cost" of \$1,000.

The result: 100% less 30.6% equals 69.4% divided into \$1,000 resulting in a total cost of \$1,440.92.

This increases the annual payment by \$139.08, with a tax increase of \$40.34 (assuming a tax rate of \$28 per \$1,000), and \$2 in insurance.

The result on a 25-year 9% mortgage: \$4,535.50 cost to the consumer.

Some would argue that builders should "segregate" their costs and not charge profit or overhead on some costs, such as permit fees. Obviously, on reflection, that makes no sense. It takes staff time to complete the forms, obtain the permit, etc.

It should be noted that any cost in the land development phase of construction is greater than indicated here because of the carrying charges on the land between the time the cost is incurred and the interim loan obtained. (This Appendix starts the process at the interim loan phase).

Appendix F

North Carolina Chapter
The American Institute of Architects

25 January 1978

STATEMENT OF NORTH CAROLINA AIA GOVERNMENT AFFAIRS COMMITTEE

Prepared by S. Thomas Shumate, Jr., AIA, Chairman

RE: Ratified Bill: Resolution 92 House Joint Resolution 1360
(are there sections of the NC Building Code which are un-
necessarily restrictive resulting in building costs needlessly
putting home ownership out of the reach of many North
Carolinians?)

We appreciate the opportunity to speak, and we congratulate
the Committee for their concern for Codes and the public safety.
The safety of the public must not be impaired, and we have con-
cerns regarding enforcement of the Codes in general that we shall
address at your request in further considerations; however, we
shall speak specifically in regard to housing.

Of the many costs to be considered in housing construction --
such as land, zoning and use of land, site development, material,
labor, financing, profit and real estate fees -- we feel compliance
to Codes is not an appreciable item. Our NC State Building Code,
as well as Federal requirements, have established standards that
are considered as minimum in the construction industry. As all
costs rise, we see Multi-Family Housing as becoming a more
available means to home ownership. We suggest that incentives
and encouragement be given towards development of this type of
housing with the use of innovative designs and new materials.

We thank the Legislature for passage of laws that will further
protect the public by requiring proper inspections and we are
available to assist and further develop your study of these issues.

Appendix F

North Carolina Chapter
The American Institute of Architects

25 January 1978

STATEMENT OF NORTH CAROLINA AIA ENERGY COMMITTEE
Prepared by John K. Anderson, AIA, Chairman

RE: Ratified Bill: Resolution 92 House Joint Resolution 1360
(are there sections of the NC Building Code which are un-
necessarily restrictive resulting in building costs needlessly
putting home ownership out of the reach of many North
Carolinians?)

Several factors including Code requirements have all acted to increase the cost of constructing low cost housing. However, it is my observation that the Code requirements do not contribute significantly to this cost increase. On the contrary, they establish an absolute minimum for quality construction and habitability requirements. The most recent major addition to the Code - the insulation requirement for residential construction - actually should not affect the overall project cost. The reason for this, as documented by the Arthur D. Little study, would indicate that the cost for the installation of insulation is off-set by the reduction in installed heating and air conditioning costs. However, these savings which should result from reduced HVAC systems are in most cases not being achieved because of the industry's tendency to size heating systems according to non-insulated standards. The result of this then indeed is increased costs for construction as well as unnecessary costs for equipment operation resulting from the inefficiency of over-sized systems. Not only is the cost of construction increased but the intention of keeping energy consumption costs down is lost. The blame for the increased cost is not be found in the Code.

Appendix G

Speakers and Participants

Mr. Dick Catchpole
American Wood Preserves, Inc.

Mr. Harold Lichtin
Department of Administration

Mr. Kern Church
Department of Insurance

Mr. Larry Schuester
John Crosland Company

Mr. Ray DeBruhl
N. C. State University

Mr. S. Thomas Shumate, Jr.
NCAIA

Mr. Durward F. Gunnells
N. C. Association of County
Commissioners

Mr. William A. Taylor
N. C. Home Builders Association

Mr. Gene Jones
NCAIA

Mr. Stephen Thomson
Department of NRCD

Mr. Ellehne Keesler
Concrete Supply Company

Mr. Jeffrey L. Tucker
Boise Cascade Corporation

Mr. Earnest Kiker
Portland Cement Company

